

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. Serial No. : 10/599,858
Appellants : Matthew P.J. Baker et al.
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Examiner : SIVJI, Nizar N.
Atty. Docket : GB 040090

**Title: ALLOCATION OF ACCESS SLOTS TO MOBILE STATIONS IN ORDER TO
COUNT THE NUMBER OF STATIONS INTERESTED IN A MBMS (MULTIMEDIA
BROADCAST/MULTICAST SERVICE)**

Mail Stop: **APPEAL BRIEF - PATENTS**
Commissioner for Patents
Alexandria, VA 22313-1450

APPEAL UNDER 37 CFR 41.37

Sir:

This is an appeal from the decision of the Examiner dated 10 June 2009, finally rejecting Claims 1-9 and 11-24 of the subject application. Claim 9 was subsequently cancelled by the Appellants in response to the decision dated 10 June 2009.

This paper includes (each beginning on a separate sheet):

1. Appeal Brief;
2. Claims Appendix;
3. Evidence Appendix; and
4. Related Proceedings Appendix.

APPEAL BRIEF

I. REAL PARTY IN INTEREST

The above-identified application was initially assigned, in its entirety, to Koninklijke Philips Electronics N.V. ("KPENV"). Subsequent to this assignment, KPENV transferred by agreement, a 50% (fifty percent) ownership interest in the above-identified application to Sharp Corporation of Osaka, Japan.

II. RELATED APPEALS AND INTERFERENCES

Appellants are not aware of any co-pending appeal or interference that will directly affect, or be directly affected by, or have any bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-8 and 11-24 are pending in the application.

Claims 1-8 and 11-24 stand rejected by the Examiner as indicated in the final Office Action dated 10 June 2009 and by the Advisory Action dated 18 August 2009.

These rejected claims are the subject of this appeal.

IV. STATUS OF AMENDMENTS

Amendments were filed subsequent to the final rejection in the Office Action dated 10 June 2009. The Amendments were filed in response to the final rejection on 10 August 2009. The Amendments were considered and entered by the Examiner as stated in the Advisory Action dated 18 August 2009.

V. SUMMARY OF CLAIMED SUBJECT MATTER¹

The invention relates to a method of operating a radio network, such as UMTS or cdma2000, which comprises at least one primary station (PS), i.e., an access point or base station, and a plurality of secondary stations (SS1, SS2, SS3), i.e., mobile stations. [See paragraphs 0018 and 0019 of the published application, US 2008/0267136, Figure 1] The primary station determines the level of interest of the users of the secondary stations in a particular service, such as Multimedia Broadcasting and Multicast Services (MBMS), by allocating a respective plurality of access slots in which the secondary stations can transmit an indication of interest. [See paragraphs 0022 and 0023 of the published application, Figure 2] The primary station receives the indication of interest to and estimates the level of interest from the number of transmitted indications, for example, whether or not they exceed a threshold value. Depending on the result of the estimation process the primary station selects a particular one of at least two transmission modes for transmitting the service. [See paragraph 0033 of the published application] According to said “approximation counting” of users interested in an MBMS service, the primary station selects a certain transmission mode for the implementation of the service (i.e., a point-to-point or a point-to-multipoint basis). [See paragraph 0033 of the published application and Figure 2]

Independent Claim 1 recites a method of operating a radio network comprising a primary station (PS) and a plurality of secondary stations (SS1, SS2, SS3) [Figure 1 and paragraph 0019 of the published application, US 2008/0267136], wherein the primary station determines a level of interest by users of secondary stations in a service by providing a

¹ It is respectfully noted that it is not the Appellants' intention that the claimed embodiments of this invention be limited to operation within the example embodiments described in this brief, beyond what is required by the claim language. These examples and their description are provided to facilitate ease of understanding and to comply with the requirements of an appeal brief, without intending that any further interpreted limitations be read into the claims as presented.

plurality of random access slots [Block 44 of Figure 2] that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations [Paragraphs 0031 to 0033 of the published application], wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots [Paragraph 0022 of the published application].

Dependent Claim 6 recites that each access slot of the plurality of random access slots includes a combination of one time slot and one signature [Paragraph 0021 of the published application]. Claim 6 further recites that the primary station maps each of the plurality of random access slots to a different service such that all the secondary stations interested in one service transmit using one of the plurality of random access slots, and in that each combination of one time slot and one signature is contained in not more than one of the plurality of random access slots [Paragraph 0022 of the published application].

Independent Claim 18 recites a radio network [Figure 1] comprising a primary station (PS) and a plurality of secondary stations (SS1, SS2, SS3), wherein the primary station (PS) includes means for determining a level of interest by users of secondary stations in a service, the means providing a plurality of random access slots [Block 44 of Figure 2] that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations [Paragraphs 0031 to 0033 of the published application, US 2008/0267136], wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots [Paragraph 0022 of the published application].

Dependent Claim 20 recites that each access slot includes a combination of one time slot and one signature [Paragraph 0021 of the published application]. Claim 20 further recites that the primary station (PS) comprises means for mapping each of the plurality of random access slots to a different service such that all the secondary stations interested in one service transmit using one of the plurality of random access slots, and wherein each combination of one time slot and one signature is contained in not more than one of the plurality of random access slots [Paragraph 0022 of the published application].

Independent Claim 23 recites a primary station for use in a radio network comprising at least one primary station (PS) and a plurality of secondary stations (SS1, SS2, SS3) [Figure 1], wherein the primary station (PS) includes means for determining a level of interest by users of secondary stations in a service, the means providing a plurality of random access slots [Block 44 of Figure 2] that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations [Paragraphs 0031 to 0033 of the published application, US 2008/0267136], wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots [Paragraph 0022 of the published application].

Independent Claim 24 recites a secondary station for use in a radio network comprising a primary station (PS) and a plurality of the secondary stations (SS1, SS2, SS3) [Figure 1], wherein the primary station (PS) includes means for determining a level of interest by users of secondary stations in a service, the means providing a plurality of random access slots [Block 44 of Figure 2] that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of

interest of the users of the secondary stations [Paragraphs 0031 to 0033 of the published application, US 2008/0267136], wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots [Paragraph 0022 of the published application].

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 9, 14, 18, 23 and 24 stand rejected under 35 U.S.C. 103(a) over Van Beek (U.S. Patent Application No. 2002/0083465) in view of Mousley (U.S. Patent No. 6,611,514. Claims 6-8, 11-13 and 20-22 stand rejected under 35 U.S.C. 103(a) over Van Beek in view of Mousley and further in view of Salloum Salazar et al. (U.S. Patent Application No. 2003/0072321). Claims 2-5, 15-17 and 19 stand rejected under 35 U.S.C. 103(a) over Van Beek in view of Mousley and further in view of Cooper (U.S. Patent Application No. 2002/0069038).

VII. ARGUMENT

I. Claims 1, 9, 14, 18, 23 and 24 stand rejected under 35 U.S.C. 103(a) over Van Beek in view of Mousley

Claim 1 recites, inter alia, as follows:

“...providing a plurality of random access slots that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations, wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots ...” (emphasis added)

The underlined language above was incorporated into independent Claim 1 from cancelled dependent Claim 9 in response to the final Office Action dated 10 June 2009.

Van Beek and Mousley, taken alone or in any proper combination, fail to disclose or suggest “...providing a plurality of random access slots that are selectively configured for permitting a

temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations, wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots,” as recited in amended independent Claim 1.

The Examiner states the following on page 4 of the final Office Action and provides a similar statement in the Advisory Action with respect to the teachings of Van Beek with reference to Appellants’ claimed subject matter:

Van [Beek] further discusses that wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of a plurality of random access slots (i.e., in the known CATV system (e.g. primary station)[]) has, in the downstream direction, a frequency pass band comprising a plurality of substantially equally spaced and sized (6 MHz) frequency channels. This frequency band has a lower edge between 50 and 54 MHz and an upper edge that is implementation-dependent but is typically in the range of 300 to 864 MHz. Within that frequency band, (NTSC) analog television signals may be present, as well As other narrowband and wideband digital signals. All these signals are transmitted in 6-MHz frequency channels. Some of these frequency channels may carry data signals which are of interest for the secondary stations.

In contrast, in the present disclosure, interest from one or more of the secondary stations is first received by the primary station before data signals corresponding to a service are transmitted to the one or more interested secondary stations. That is, transmission occurs after one or more secondary stations are identified to have an interest in receiving the service. In the teachings of Van Beek, data signals are transmitted to the secondary stations without knowing if at least one of the secondary stations is interested in receiving the data signals. That is, there is no communication of an interest from the secondary stations to the primary station in the system described by Van Beek as is required by Appellants’ independent Claim 1.

In particular, as recited by Appellants' independent Claim 1, the secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots to the primary station (i.e., in the upstream direction). That is, the predetermined signal is transmitted from the secondary stations to the primary station, whereas the cited prior art teaches transmitting a predetermined signal in a preselected one of a plurality of random access slots from the primary station to the plurality of secondary stations (i.e., in the downstream direction as referred to by the Examiner). Support for Appellants' features can be found at least at paragraph 0026 of the published application.

Moulsley fails to address the deficiencies of Van Beek. Moulsley is directed to a radio communication system in which secondary stations can request services from a primary station using random access or dedicated signaling methods. The primary station partitions a single uplink channel between random access and dedicated signaling transmissions, thereby enabling the advantages of both types of transmissions to be provided on a single channel without the need for the duplication of hardware otherwise required to handle two different types of channel.

Moulsley does not disclose or suggest, *inter alia*, "...providing a plurality of random access slots that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations, wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots ..." as recited by Appellants' independent Claim 1.

Independent Claims 18, 23, and 24 include the same or similar limitations to those of Claim 1, and are allowable over the prior art of record for at least the same reasons presented above for the patentability of independent Claim 1.

Because Van Beek and Mousley, taken alone or in any proper combination, fail to disclose or suggest, *inter alia*, "...providing a plurality of random access slots that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations, wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots," as recited by Appellants' Claim 1 and similarly recited by Appellants' Claims 18, 23 and 24, the Appellants respectfully maintain that the rejection of Claims 1, 18, 23 and 24 under 35 U.S.C. 103(a) over Van Beek in view of Mousley is unfounded and should be reversed by the Board.

Dependent Claim 14 depends from independent Claim 1 and is therefore allowable over the prior art of record for at least the same reasons presented above for the patentability of independent Claim 1. Accordingly, Appellants respectfully maintain that the rejection of Claim 14 under 35 U.S.C. 103(a) over Van Beek in view of Mousley is unfounded and should be reversed by the Board.

II. Claims 6-8, 11-13 and 20-22 stand rejected under 35 U.S.C. 103(a) over Van Beek in view of Mousley and further in view of Salloum Salazar et al.

Salloum Salazar does not address the deficiencies of Van Beek and Mousley with respect to independent Claims 1 and 18 as described above. Furthermore, Salloum Salazar does not disclose or suggest features recited by dependent Claims 6 and 20. In particular,

Salloum Salazar does not disclose or suggest “wherein each access slot includes a combination of one time slot and one signature, wherein the primary station (PS) comprises means for mapping each of the plurality of random access slots to a different service such that all the secondary stations interested in one service transmit using one of the plurality of random access slots, and wherein each combination of one time slot and one signature is contained in not more than one of the plurality of random access slots,” as recited by Appellants’ dependent Claims 6 and 20.

Additionally, there is no suggestion in the references, taken alone or in combination, that a combined system would allow the “primary station to acquire a frequency channel relatively fast” as stated by the Examiner in the final Office Action. There is no explanation provided by the Examiner as to his reasoning behind this conclusory statement. The U.S. Supreme Court in *KSR v. Teleflex* warns against “mere conclusory statements” and requires “articulated reasoning.”

Accordingly, dependent Claims 6-8, 11-13, and 20-22 are allowable over the prior art of record for at least the same reasons presented above for the patentability of independent Claims 1 and 18. Therefore, Appellants respectfully maintain that the rejection under 35 U.S.C. §103(a) with respect to dependent Claims 6-8, 11-13 and 20-22 is unfounded and should be reversed by the Board.

III. Claims 2-5, 15-17 and 19 stand rejected under 35 U.S.C. 103(a) over

Van Beek in view of Mouldsley and further in view of Cooper

Cooper does not address the deficiencies of Van Beek and Mouldsley with respect to independent Claims 1 and 18 as described above. Accordingly, dependent Claims 2-5, 15-17, and 19, are allowable over the prior art of record for at least the same reasons presented above

for the patentability of independent Claims 1 and 18. Therefore, Appellants respectfully maintain that the rejection under 35 U.S.C. §103(a) with respect to dependent Claims 2-5, 15-17 and 19 is unfounded and should be reversed by the Board.

CONCLUSIONS

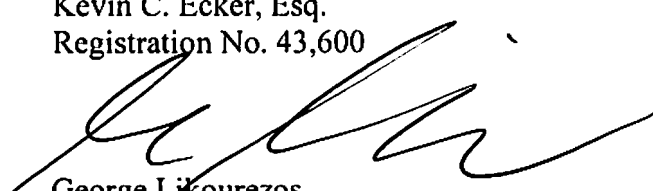
Because Van Beek and Mousley, taken alone or in any proper combination, disclose or suggest the recitations recited by independent Claims 1, 18, 23 and 24 as discussed above, the Appellants respectfully request that the Examiner's rejection of these independent claims and their respective dependent claims, namely, Claims 1-8 and 11-24, under 35 U.S.C. 103(a) be reversed by the Board, and the claims be allowed to pass to issue.

Respectfully submitted,

Kevin C. Ecker, Esq.
Registration No. 43,600

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By:


George Likourezos
Reg. No. 40,067
Attorney for Appellants
631-501-5706

Mail all correspondence to:
Kevin C. Ecker, Esq.
Senior IP Counsel
Philips Electronics North America Corp.
P.O. Box 3001
Briarcliff Manor, New York 10510-8001
Phone: (914) 333-9618

CLAIMS APPENDIX

1. A method of operating a radio network comprising a primary station (PS) and a plurality of secondary stations (SS1, SS2, SS3), wherein the primary station determines a level of interest by users of secondary stations in a service by providing a plurality of random access slots that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations, wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots.

2. The method as claimed in claim 1, wherein the primary station estimates the level of interest from a number of transmitted indications and selects a transmission mode of the service in dependence on whether the level of interest is relatively high or relatively low.

3. The method as claimed in claim 2, wherein the transmission mode for the relatively high level of interest is point-to-multipoint.

4. The method as claimed in claim 2, wherein the transmission mode for the relatively low level of interest is point-to-point.

5. The method as claimed in claim 2, wherein the primary station sets a threshold level for determining the transmission mode of the service and, when the number of transmitted indications exceeds the threshold level, the transmission mode for the relatively

high level of interest is operated.

6. The method as claimed in claim 1, wherein each access slot of the plurality of random access slots includes a combination of one time slot and one signature, and wherein the primary station maps each of the plurality of random access slots to a different service such that all the secondary stations interested in one service transmit using one of the plurality of random access slots, and in that each combination of one time slot and one signature is contained in not more than one of the plurality of random access slots.

7. The method as claimed in claim 6, wherein each of the plurality of random access slots uses the same signature and in that each random access slot in the plurality of random access slots uses a different time slot.

8. The method as claimed in claim 6, wherein each of the plurality of random access slots uses the same time slot and in that each random access slot in the plurality of random access slots uses a different signature.

9. (Cancelled)

10. (Cancelled)

11. The method as claimed in claim 1, wherein the level of interest is transmitted as spread spectrum signals and a number of indications is estimated by estimating a number of

correlation peaks in a given random access time slot.

12. The method as claimed in claim 1, wherein the level of interest is transmitted as spread spectrum signals and a number of indications is estimated by estimating a received energy in a given random access slot.

13. The method as claimed in claim 1, wherein the secondary stations are allocated to a respective one of two or more pluralities of access slots and in that a secondary station of the plurality of secondary stations desiring to transmit an indication of interest, transmits in its allocated plurality of random access slots.

14. The method as claimed in claim 13, wherein when an estimated level of interest exceeds a predetermined level of interest, the primary station instructs the plurality of secondary stations waiting to transmit in their allocated access slot not to transmit.

15. The method as claimed in claim 1, wherein a secondary station of the plurality of secondary stations indicating an interest in the service also indicates a quality level for receiving the service.

16. The method as claimed in claim 15, wherein the primary station transmits a higher quality level of service in a mode different from the transmission of a lower quality level of service.

17. The method as claimed in claim 1, the primary station transmits a basic data stream as a point-to-multipoint transmission and a supplementary data stream for enhancing a quality of the basic data stream as a point-to-point transmission.

18. A radio network comprising a primary station (PS) and a plurality of secondary stations (SS1, SS2, SS3), wherein the primary station (PS) includes means for determining a level of interest by users of secondary stations in a service, the means providing a plurality of random access slots that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations, wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots.

19. The radio network as claimed in claim 18, further comprising estimating means for estimating the level of interest from a number of transmitted indications and mode selection means for selecting a transmission mode of the service in dependence on whether the level of interest is relatively high or relatively low.

20. The radio network as claimed in claim 18, wherein each access slot includes a combination of one time slot and one signature, wherein the primary station (PS) comprises means for mapping each of the plurality of random access slots to a different service such that all the secondary stations interested in one service transmit using one of the plurality of random access slots, and wherein each combination of one time slot and one signature is

contained in not more than one of the plurality of random access slots.

21. The radio network as claimed in claim 18, further comprising spread spectrum transceiving means and wherein an estimating means is adapted to estimate the level of interest by estimating a number of correlation peaks in a respective random access slot.

22. The radio network as claimed in claim 18, further comprising spread spectrum transceiving means and wherein an estimating means is adapted to estimate the level of interest by estimating a received energy in a respective random access slot.

23. A primary station for use in a radio network comprising at least one primary station (PS) and a plurality of secondary stations (SS1, SS2, SS3), wherein the primary station (PS) includes means for determining a level of interest by users of secondary stations in a service, the means providing a plurality of random access slots that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations, wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots.

24. A secondary station for use in a radio network comprising a primary station (PS) and a plurality of the secondary stations (SS1, SS2, SS3), wherein the primary station (PS) includes means for determining a level of interest by users of secondary stations in a service,

the means providing a plurality of random access slots that are selectively configured for permitting a temporary or permanent allocation of a portion of the plurality of random access slots based on the level of interest of the users of the secondary stations, wherein a secondary station of the plurality of secondary stations indicates the level of interest by transmitting a predetermined signal in a preselected one of the plurality of random access slots.

EVIDENCE APPENDIX

No evidence has been submitted that is relied upon by the Appellants in this appeal.

RELATED PROCEEDINGS APPENDIX

Appellants are not aware of any co-pending appeal or interference which will directly affect or be directly affected by or have any bearing on the Board's decision in the pending appeal.